



Construction Process Step by Step

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1- site preparation, excavation, and foundation work

The crew clears the site from any rocks, debris and trees for a leveled site.

If the building has a full basement, then the hole is dug and the footings (structures where the building interfaces with the earth that supports it) are formed and poured, as well as the foundation walls.

If it's slab-on-grade, the footings are dug, formed and poured; the area between them is leveled and fitted with utility runs (e.g. plumbing drains and electrical chases); and the slab is poured.

INSPECTION #1:

Before pouring the concrete, city inspector visits the site for approval. When the curing process is completed, the city inspector visits the site to make sure foundation components are up to code and installed properly. This inspection may be repeated depending on the type of foundation (slab, crawl space or basement).



2- Complete rough framing



Framing



Framing

The floor systems, walls and roof systems are completed (these are known as the shell or skeleton of the building). Sheathing system (such Plywood, oriented strand board (OSB) ,or DensGlass sheathing) is applied to the exterior walls and roof. Windows and exterior doors are installed. The sheathing is covered with a protective barrier known as a building wrap (weather and air barrier ; which prevents liquid water from infiltrating the structure, while allowing water vapor to escape. This reduces the likelihood of mold and wood rot.

3- Complete rough plumbing, electrical and HVAC

Once the shell is finished, the electrical and plumbing contractors start the rough-in work for the exterior wall and the roof. Siding and roofing can be installed at the same time, the electrical and plumbing contractors start running pipes and wires through the interior walls, ceilings and floors. Sewer lines and vents, as well as water supply lines for each fixture, are installed. Bathtubs and one-piece shower/tub units are put in place at this point because there's more room to maneuver large, heavy objects.

Ductwork is installed for the heating, ventilation and air conditioning (HVAC) system, and possibly the furnace and in-floor-heating. HVAC vent pipes are installed through the roof and insulation is installed in the floors, walls and ceilings.

After the roofing goes on, the house is considered "dried in." An electrician then installs receptacles for outlets, lights and switches and runs wires from the breaker panel to each receptacle. Wiring for telephones, cable TV and music systems is included in this work.

Note that HVAC ducts and plumbing are usually installed before wiring, because it's easier to run wires around pipes and ducts than vice versa.

INSPECTIONS #2, #3 and #4:

Rough framing, plumbing, electrical and mechanical systems are inspected for compliance with building codes. Most likely these will be three different inspections.

Framing inspection will be conducted separately from the electrical/mechanical inspections.



4- Install insulation

Insulation plays a key role in creating a more comfortable, consistent indoor climate while significantly improving a building's energy efficiency. One of the most important qualities of insulation is its thermal performance or R-value, which indicates how well the material resists heat transfer. Most buildings are insulated in all exterior walls, as well as the attic and any floors that are located above unfinished basements or crawl spaces.

The most common types of insulation used in new buildings are **fiberglass, cellulose and foam**. Depending on the region and climate, may also use mineral wool (otherwise known as rock wool or slag wool); concrete blocks; foam board or rigid foam; insulating concrete forms (ICFs); sprayed foam; and structural insulated panels (SIPs).

Blanket insulation, which comes in batts or rolls, is typical in new-home construction. So is loose-fill and blown-in insulation, which is made of fiberglass, cellulose or mineral-wool particles. Another insulation option, liquid foam, can be sprayed, foamed-in-place, injected or poured. While it costs more than traditional batt insulation, liquid foam has twice the R-value per inch and can fill the smallest cavities, creating an effective air barrier.

Fiberglass and mineral-wool batts and rolls are usually installed inside walls, attics, floors, crawl spaces, cathedral ceilings and basements. Manufacturers often attach a facing such as Kraft paper or foil-kraft paper to act as a vapor barrier and/or air barrier. In areas where the insulation will be left exposed, such as basement walls, the batts sometimes have a special flame-resistant facing.

INSPECTION #5:

A city inspector visits the site to make sure the insulation and vapor barrier work are up to code and installed properly.



5- Complete drywall and interior textures; start exterior finishes



Drywall is hung and taped so the seams between the boards aren't visible, and drywall texturing (if applicable) is completed. The primer coat of paint is also applied after taping is complete. Simultaneously, contractors begin installing exterior finishes such as brick, stucco, stone and siding.

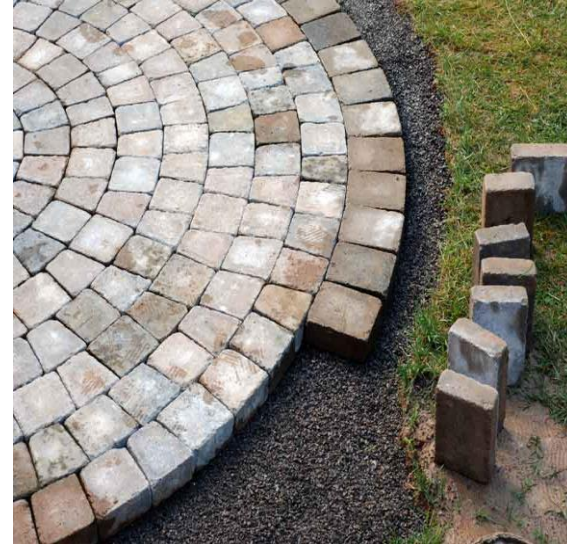
6- Finish interior trim; install exterior driveways and walkways



Window Trims



Interior Trims



Driveways



Walkways

Interior doors, door casings, windowsills, moldings, stair balusters and other decorative trim are installed, along with cabinets, vanities and fireplace mantels and surrounds. Walls get a finish coat of paint and add wallpapered where applicable. Generally, exterior driveways, walkways and patios are formed at this stage. Many builders prefer to wait until the end of the project before pouring the driveway because heavy equipment (such as a drywall delivery truck) can damage concrete. But some builders pour the driveway as soon as the foundation is completed so that when homeowners visit the construction site, they won't get their shoes muddy.

7- Install hard-surface flooring and countertops; complete exterior grading:



Tiles



Hardwood



Stone

Ceramic tile, vinyl and wood flooring are installed as well as countertops. Exterior finish grading is completed to ensure proper drainage away from the home and prepare the yard for landscaping

8- Finish mechanical ,and electrical trims; install bathroom fixtures



Lights



Outlets



HVAC Vents



Outlets

Light fixtures, outlets and switches are installed, and the electrical panel is completed. HVAC equipment is installed, and registers completed. Sinks, toilets and faucets are put in place.

9- Install mirrors, shower doors and bathroom accessories ; finish exterior landscaping



Mirrors



Shower Doors



Faucets



Trees, shrubs and grass

INSPECTION #6:

A building-code official completes a final inspection and issues a certificate of occupancy. If any defects are found during this inspection, a follow-up inspection may be scheduled to ensure that they've been corrected.

10- Final walk-through



The Building company will walk the client through their new home to acquaint them with its features and the operation of various systems and components and explain the client responsibilities for maintenance and upkeep, as well as warranty coverage and procedures (TARION warranty for houses) . This is often referred to as a pre-settlement walk-through. It's also an opportunity to spot items that need to be corrected or adjusted, so be attentive and observant. Examine the surfaces of countertops, fixtures, floors and walls for possible damage. Sometimes disputes arise because the homeowner discovers a gouge in a countertop after move-in and there's no way to prove whether it was caused by the builder's crew or the homeowner's movers.